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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/685,191	10/06/2000	Reginald Hunter	AMAT/3083.P7/FET/FET/DV	5577
32588	7590	04/07/2005	EXAMINER	
APPLIED MATERIALS, INC. 2881 SCOTT BLVD. M/S 2061 SANTA CLARA, CA 95050			SMITH, ZANDRA V	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 04/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/685,191	Applicant(s) HUNTER, REGINALD (Signature)	
	Examiner Zandra V. Smith	Art Unit 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-17 and 19-21 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6, 13-17 and 19-21 is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5, 7, 8 and 10 is/are rejected.
- 7) ☒ Claim(s) 2, 9, 11 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

The amendment filed 17 November 2004 has been entered into the case and an office action in response follows.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 5 and 7-8 are rejected under 35 U.S.C. 102(b) as being anticipated by *Hamilton* (5,444,265).

As to **claim 5**, Hamilton discloses a method and apparatus for detecting defective semiconductor wafers during fabrication, comprising:

receiving process data readings from at least one optical inspection system, wherein the data readings comprise optical signal signature information indicative of a topographical condition on the substrate surface inspected by the at least one optical inspection system; determining whether an unacceptable substrate process condition exists; and if the unacceptable substrate process condition exists, then initiating a system shut down sequence (col. 4, lines 5-34).

As to **claim 7**, Hamilton discloses a method and apparatus for detecting defective semiconductor wafers during fabrication, comprising:

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a plurality of optical inspection systems (col. 4, lines 34-50), each being configured to perform an optical inspection process and each comprising a transmitter unit and a receiver unit; and

a controller system connected to the optical inspection systems and configured to process optical signal information indicative of a topographical condition on a substrate inspected by at least one of the optical inspection systems, and determines a routing sequence for the substrate in response to the topographical condition (col. 4, lines 11-32). Please note that the system is shutdown in response to measurement and if not defective the wafers are continually processed, therefore the wafers are routed in response to measurement.

As to **claim 8**, Hamilton discloses everything claimed, as applied above, in addition the optical inspection system is disposed on a processing line along a transfer path of the substrate (col. 2, lines 53-62).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Hao (US 6,188,564 B1)* in view of *Lewis et al. (5,308,447)*.

As to **claim 1**, Hao discloses a method and apparatus for compensating non-uniform wafer processing in plasma processing chamber, comprising:

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receiving process data readings from an inspection system, wherein the data readings comprise signal signature information indicative of a process uniformity on the substrate surface inspected by the at least one inspection system (col. 3, lines 25-35 and col. 3, line 64-col. 4, line5);

determining whether the process data readings exceed a predetermined value; and if the data readings exceed the predetermined value, determining that an unacceptable topographical condition exists on the substrate (col. 6, lines 32-55). Hao differs from the claimed invention in that the details of the measurement system are not provided, however the use of an optical measurement system for determining process uniformity is well known as taught by Lewis. Lewis discloses an endpoint and uniformity determination system that includes an optical inspection to measure uniformity (col. 10, lines 9-12). It would have been obvious to one having ordinary skill in the art at the time of invention to use an optical system to measure uniformity to provide a means for measurement without damage to the surface.

As to **claim 3**, Hao and Lewis discloses everything claimed, as applied above, in addition Hao provides non-uniform plasma disposition information (col. 6, lines 32-40).

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Hamilton (5,444,265)* in view of *Ishikawa et al. (6,185,322 B1)*.

As to **claim 10**, Hamilton discloses everything claimed, as applied above, with the exception an input device, however to do so is well known as taught by Ishikawa. Ishikawa discloses an inspection system and method that includes the use of a keyboard (col. 18, line 68). It would have been obvious to one having ordinary skill in the art at the time of invention to include a keyboard to allow for entry of data and details on the particular test being performed.

Allowable Subject Matter

Claims 6, 13-17 and 19-21 allowable over the prior art of record.

Claims 2, 9, 11-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record, taken alone or in combination, fails to disclose or render obvious, transferring the substrate to an inspection platform, if it is determined that an unacceptable topographical condition exists on the substrate (claim 2), determining the location of the substrate in the processing system to determine a routing sequence for the substrate, if it is determined that an unacceptable topographical condition exists on the substrate (claim 6), a spectrometer (claim 9), determining if the data exceeds a predetermined value (claim 11), performing optical inspection at a first degree of resolution and resolution at a second degree of resolution (claims 13 and 15), a plurality of optical inspection system disposed at different locations on a cluster tool (claims 14 and 21), in combination with the rest of the limitations of the claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Begin et al. (5,310,410) disclose a method for producing semiconductor wafers that includes a system shutdown in response to measurement.

Hiatt et al. (5,963,315) disclose a method and apparatus for processing a semiconductor wafer that includes a system shutdown in response to measurement and routing the wafer in response to measurement.

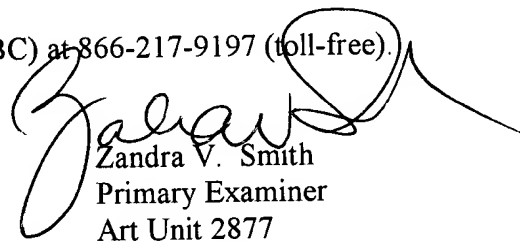
Fisher, Jr. et al. (6,045,434) discloses a method and apparatus for monitoring polishing pad wear that includes means for determining process uniformity.

Fax/Telephone Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zandra V. Smith whose telephone number is (571) 272-2429. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Zandra V. Smith
Primary Examiner
Art Unit 2877